

Serial No. 09/553,107 (filed 04/20/2000)  
Attorney Docket No. GJH-0018 (P1998J107D)  
Response to Office Letter dated 08/16/2004

### REMARKS

Applicants acknowledge the entering of their submission filed July 9, 2004, along with the grant of their request for continued examination under 37 C.F.R. 1.114.

### REJECTION UNDER 35 U.S.C. 103(a)

Claims 1-7, 9-12, 16 and 18 have been rejected under 35 U.S.C. 103(a) as being obvious over United States Patent Number 5,292,428, Harrison et al. ("Harrison").

### EXAMINER'S POSITION

It is the Examiner's position that Harrison teaches a process wherein hydrocarbon feedstock is passed through two or more hydrodesulfurization zones connected in a series, each zone containing a packed bed of solid catalyst wherein the liquid is passed from a first zone to the next until the final zone. The Examiner further mentions: make-up hydrogen being supplied to the hydrodesulfurization zone other than the first zone; hydrogen-containing gas being recovered from a subsequent hydrodesulfurization zone; target sulfur levels, etc. The Examiner believes that Harrison teaches a process and composition that reasonably appears to be either the same or an obvious variation of the instantly claimed product and composition.

The Examiner also states that it would have been obvious to utilize a hydrogen containing treat gas supplied by a source other than the process of Harrison to the first hydrotreating stage of Harrison. In particular, the Examiner states that since Harrison

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teaches to maintain a sufficient H<sub>2</sub>S level in the reactors, than it would have been obvious to use a hydrogen-containing treat gas containing the H<sub>2</sub>S.

#### APPLICANTS' POSITION

It is applicants' position that one having ordinary skill in the art and knowledge of Harrison at the time the invention was made would not have found it obvious to arrive at the presently claimed invention.

Claim 1, as amended in the July 9, 2004 submission, requires that the hydrogen-containing treat gas used in the first hydrodesulfurization stage contain a portion of hydrogen-containing treat gas supplied from a source other than the presently claimed multi-stage process.

The Examiner contends that the addition of a portion of hydrogen-containing treat gas supplied from a source other than the presently claimed multi-stage process, would have been obvious to one having ordinary skill in the art. Specifically, the Examiner cites to col. 16, lines 33+ as providing support for the addition of hydrogen-containing treat gas provided by a source other than the process disclosed in Harrison. More particularly, the examiner contends that since Harrison teaches to maintain a sufficient H<sub>2</sub>S level in the reactors, than it would have been obvious to use a hydrogen-containing treat gas containing H<sub>2</sub>S to maintain a sufficient level of H<sub>2</sub>S.

Applicants respectfully disagree with the Examiner. Applicants do concede that at col. 16, lines 33+ of Harrison teach that if the H<sub>2</sub>S of the feedstreams to the various reactors should "fall below the minimum safe level, then an appropriate amount of H<sub>2</sub>S,

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CS<sub>2</sub>, COS, an alkyl mercaptan, or a similarly readily converted sulphur-containing compound is supplied in the form of a solution in line 28 to raise the H<sub>2</sub>S level to the required value." See Harrison col. 16, lines 40-46. Applicants respectfully call to the Examiner's attention, the use of the word "solution" in Harrison when describing the source of the H<sub>2</sub>S, CS<sub>2</sub>, COS, an alkyl mercaptan, or a similarly readily converted sulphur-containing compound. Harrison, at col. 16, lines 17-25 describes the same sources of H<sub>2</sub>S that may be added to the feedstream. More specifically, this section of Harrison states that "If, however, for any reason the H<sub>2</sub>S level at the inlet to the first reactor 5 should fall below a safe level, then a suitable amount of a sulfur containing material, preferably an active sulfur containing material such as CS<sub>2</sub>, COS, a mercaptan (e.g. n-butyl mercaptan), a dialkyl disulphide (such as di-n-butyl sulfide), or a dialkyl disulphide (e.g. di-n-butyl disulphide) is supplied, conveniently as a solution in a hydrocarbon solvent, in line 28 to boost the sulfur content of the feed."

Thus, it is applicants' position that Harrison teaches that the H<sub>2</sub>S level of the feed to the reactors can be increased by the addition of an H<sub>2</sub>S source supplied by dissolving the H<sub>2</sub>S contributor in a hydrocarbon solvent to produce a solution. The solution is then added to the reactor feedstream to maintain a minimum "safe level" of H<sub>2</sub>S in the feedstream. Harrison neither teaches nor suggests to utilize a hydrogen-containing treat gas in the first reaction stage disclosed therein that contains at least a portion of hydrogen containing treat gas supplied by a source other than the Harrison process, as is presently claimed.

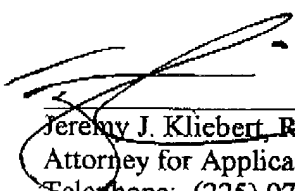
The Examiner is requested to reconsider and withdraw this rejection.

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Based on the preceding arguments and amendments, the Examiner is requested to reconsider and withdraw all rejections and pass this application to allowance. The Examiner is encouraged to contact applicants' attorney should the Examiner wish to discuss this application further.

Respectfully submitted:

Date: 10-14-2004



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